

## AMENDMENTS TO THE CLAIMS

The following listing of claims shows all claims that are, or ever were, in the instant application. This listing is intended to replace all prior listings, and versions, of claims.

### Listing of claims:

1. (Currently amended.) A method for augmenting at least one physical catalyst in a chemical reaction system, ~~wherein said chemical reaction is catalyzed by a physical catalyst which does not require the addition of radiant or light energy to function as a catalyst in the chemical reaction system;~~ comprising the steps of:
  - a) determining an electromagnetic spectral pattern of said at least one physical catalyst under conditions approximating those occurring in the chemical reaction system using the physical catalyst;
  - b) duplicating at least one frequency of said electromagnetic spectral pattern of step (a) with at least one electromagnetic energy emitter source; and
  - c) exposing said chemical reaction system to said at least one frequency of said duplicated electromagnetic spectral pattern thereby augmenting said at least one physical catalyst.
2. (Previously presented.) The method according to claim 1, wherein said at least one physical catalyst comprises at least one member selected from the group consisting of metals, metal oxides and metal sulfides.
3. (Previously presented.) The method according to claim 1, wherein said electromagnetic spectral pattern is determined by at least one spectroscopy method.
4. (Previously presented.) The method according to claim 1, wherein said chemical reaction system is irradiated with said electromagnetic spectral pattern comprising at least one frequency in a range of from about radio frequency through about ultraviolet frequency.
5. (Previously presented.) The method according to claim 1, wherein said at least one frequency comprises at least one frequency in the visible light range.

6. (Previously presented.) The method according to claim 1, wherein said at least one physical catalyst comprises at least one enzyme.
7. (Previously presented.) The method according to claim 1, further comprising introducing said at least one physical catalyst into said chemical reaction system prior to exposing said chemical reaction system to said at least one frequency of said duplicated electromagnetic spectral pattern.
8. (Previously presented.) The method according to claim 3, wherein said at least one spectroscopy method comprises at least one method selected from the group consisting of x-ray, ultraviolet, microwave, infrared, atomic absorption, flame emissions, atomic emissions, inductively coupled plasma, DC argon plasma, arc-source emission, spark-source emission, high resolution laser and Raman.
9. (Previously presented.) The method according to claim 1, wherein said at least one physical catalyst comprises at least one member selected from the group consisting of silver, platinum, platinum oxide, nickel, palladium, rhodium, copper, ruthenium and iron.
10. (Previously presented.) The method according to claim 1, wherein said electromagnetic energy source comprises at least one laser.
11. (Previously presented.) The method according to claim 1, further comprising introducing additional physical catalyst into said chemical reaction system subsequent to exposing said chemical reaction system to said at least one frequency of said duplicated electromagnetic spectral pattern.
12. (Previously presented.) The method according to claim 1, further comprising introducing said at least one physical catalyst into said chemical reaction system substantially simultaneous with exposing said chemical reaction system to said at least one frequency of said duplicated electromagnetic spectral pattern.
13. (Currently amended.) A method for augmenting at least one physical catalyst in a chemical reaction system, ~~wherein said chemical reaction is catalyzed by a physical catalyst which does not require the addition of radiant or light energy to function as a catalyst in the chemical reaction system,~~ comprising:

exposing said chemical reaction system to at least one frequency selected from the group of frequencies consisting of (i) at least one frequency of a duplicated electromagnetic pattern of said at least one physical catalyst, (ii) at least one harmonic frequency of a duplicated electromagnetic pattern of said at least one physical catalyst and (iii) at least one frequency which copies at least one mechanism of action of said at least one physical catalyst, said exposing being sufficient to augment said at least one physical catalyst, wherein said at least one frequency corresponds to an electromagnetic spectral pattern under conditions approximating those occurring in the chemical reaction system using the physical catalyst.

14. (Previously presented.) The method according to claim 13, wherein said at least one frequency of said electromagnetic spectral pattern comprises at least one harmonic frequency of said electromagnetic spectral pattern of said at least one physical catalyst.

15. (Previously presented.) The method according to claim 13, wherein said at least one frequency copies a mechanism of action of said at least one physical catalyst.